number of years not exceeding five, so that at the age of seventy-five the retirement of a professor should be absolute.

We are quite aware that there are cases where professors at seventy and presidents at seventy-five are fully competent to discharge their duties, but the advantages derived from superannuation would be seriously diminished if, to meet these rare cases, there were uncertainty in regard to the application of a general rule. We have observed with regret that the *alumni* of the Queen's Colleges do not seek to go back to them as professors, and it was explained to us that one reason for this is that it is useless for them to prepare for a professorial career in these colleges while so much uncertainty prevails as to when the chairs will become vacant.

We also took the evidence of Profs. Lockyer and Rücker as to the conditions which prevail in the Government School of Science at South Kensington, and we found that the age of seventy for professors was considered a proper age for retirement under ordinary circumstances.

In our opinion, as the professors are not appointed till middle life, the addition of seven years to their period of service in calculating the amount of their superannuation obviously tends to secure eminent specialists as candidates for office. The power of voluntary retirement at the age of sixty has also much to commend it in this sense.

We have the honour to be
Your Lordships' obedient servants,
Playfair.
Welby.
August 5, 1895. M. W. Ridley.

The report is followed by the minutes of evidence taken on June 17, 18, and 19, during which nine witnesses were examined.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

We learn from *Science*, that Prof. Strahl, of Marburg, has been called to the chair of Anatomy in the University of Giessen, Prof. Hans Lenk, of Leipzig, to that of Geology in the University of Erlangen, and that Dr. Haecker, of Freiburg i.B., and Dr. v. Dalla-Torre, of the University of Innsbruck, have been made assistant Professors of Zoology.

Prof. Chapman having resigned the professorship of Geology and Mineralogy in the University of Toronto, that chair is now vacant.

According to *Science*, the conditions attached to the bequest made by the late Sir William Macleay to the Sydney University, to found a chair of Bacteriology, are such that the University has decided to decline the bequest. The money will therefore revert to the Linnean Society of New South Wales, to maintain a bacteriologist, who will carry on bacteriological investigations and also take pupils.

The Examinations for the Royal Agricultural Society's Junior Scholarships have been fixed to take place on November 12 and 13 next, at the schools of candidates and at the Society's house, 13 Hanover Square. Ten scholarships of £20 each are thrown open for competition by candidates between the ages of fourteen and eighteen, and the subjects of examination comprise: (1) The Principles of Agriculture, especially with reference to the rotation of crops, the nutrition of plants and animals, and the mechanical cultivation of the soil; (2) Chemistry as applied to Agriculture; (3) Elementary Mechanics as applied to Agriculture; (4) Land Surveying. The latest date for receiving entries is October 15.

The following courses of Gresham Science lectures are announced:—"Physic," by Dr. Symes Thompson, on October 8 to 11; "Astronomy," by Rev. E. Ledger, on October 22 to 25; "Geometry," by Mr. W. H. Wagstaff, on November 19 to 22. The lectures will all be delivered at six o'clock in the theatre of Gresham College, E.C.

The London Society for the Extension of University Teaching announces that, in co-operation with the Royal Geographical Society, arrangements have been made for the delivery at Gresham College of a course of twenty-five lectures by Mr. H. J. Mackinder, on "The Principles of Geography." The course is specially arranged for pupil teachers, and the Sessional Certificate, granted in connection therewith, will carry marks at the Queen's Scholarship Examination. The lectures will be given on Monday evenings at six o'clock, beginning October 7.

At the City of London College, Moorfields, a course of twenty-five lectures on "The History of Chemical Discovery" will be delivered, under the auspices of the London Society for the Extension of University Teaching, by Prof. W. Ramsay, F.R.S. The course will be begun on Tuesday evening, October 8, at eight o'clock, and be continued weekly.

On Tuesday evening, October 1, Sir Henry E. Roscoe will preside at a meeting at the Royal Victoria Hall, Waterloo Bridge Road, when the presentation of certificates to students of the Morley Memorial College will take place. The lecture arrangements at the Royal Victoria Hall for the month of October are as follow:—On the 8th, Mr. W. P. Bloxam will lecture on "Combustion"; on the 15th, Dr. W. D. Halliburton will lecture on the "Human Brain"; and on the 22nd, Mr. P. J. Hartog will lecture on "Lavoisier."

SCIENTIFIC SERIALS.

American Journal of Science, September.—Distribution and secular variation of terrestrial magnetism, by L. A. Bauer. Starting from the supposition that the earth is magnetised symmetrically to its axis of rotation, the author shows that the chief cause of distortion of this primary field can be represented as due to a secondary polarisation approximately equatorial in direction. Of these two systems, the polar systems would have to be five or six times stronger than the equatorial. Since, in going round the earth along a geographical parallel of latitude, the deflections due to the secondary system almost balance each other, the inference might be drawn that the secondary field is in some way connected with the earth's rotation.—Relations of the diurnal rise and fall of the wind in the United States, by Frank Waldo. For January the rise of wind towards the mid-day maximum is followed by a more rapid fall over nearly the whole of the United States. For July the same law holds, except in the Western States, where the morning rise is more rapid. As regards the time during which the wind rises, this is about seven hours in the Mississippi valley. On the Atlantic coast there is a decrease from ten hours in the north to five hours on the coast of Florida.—The rate of increase varies from 0·4 to 0·6 miles per hour. Native sulphur in Michigan, by W. H. Sherzer. During the past year interesting deposits of sulphur have been discovered in the Upper Helderberg limestone, of Monroe County, Michigan. The sulphur bed lies from sixteen to eighteen feet below the surface between a compact, dolomitic limestone and a calcareous sand rock. The sulphur generally occurs in bright lustrous masses towards the centre of the cavity, intermatted frequently with the above minerals. Fragments as large as a fist are readily removed. Some of the smaller cavities contain nothing but sulphur, and one was found filled with selenite crystals. About an acre of this bed had been removed when the locality was visited, and from this the superintendent estimated that one hundred barrels of pure sulphur had been obtained.

Wiedemann's Annalen der Physik und Chemie, No. 8.—Simple objective presentation of the Hertzian reflection experiments, by Victor Biernacki. The author places one of Lodge's "coherers" in the focal line of the secondary mirror. Under these conditions, mirrors with a length as small as 45 cm. and an aperture of 30 cm., with a focal length of 3 cm., exhibit the reflection phenomena well. The coherer employed is a horizontal glass tube filled with copper filings, whose resistance is reduced as soon as electric oscillations impinge upon it. The polarisation experiment is easily performed with a tiled wall, which behaves as a transparent solid to the electric rays. A striking experiment analogous to the introduction of a doubly-refracting crystal between two crossed nicolls is the introduction of a thick slab of good ice between the two crossed mirrors, with its axis of 45° to both the focal lines. The galvanometer connected with the coherer, which before was motionless, now gives a distinct reflection, thus showing the doubly-refracting nature of ice.—A convenient method for showing the electric refractive powers of liquids, by P. Drude. For this purpose, strong oscillations are necessary. These may be produced by a modification of Blondlot's arrangement, using an exciter without a condenser, whose total length is slightly smaller than half the wave-length required. The wave-lengths in water and other

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liquids are obtained by conducting the parallel wires through a long trough filled with the liquid. A bridge is put across them where they enter the water. Another bridge is placed on the wires in air on the other side of a Zehnder tube connected with a gold-leaf electroscope. This is shifted until the gold-leaves collapse. The distance between the two bridges is then, say, 36 cm. The bridge on the water's edge is then gradually shifted along the immersed wires, and the points at which the gold-leaves diverge and collapse are noted. The distance between two successive nodes is 4 cm., so that the refractive index of water for electric waves is 9, and the specific inductive capacity 81. Alcohol, glycerine, and other not very highly conducting liquids may be similarly investigated.—Inconstancy of spark potential, by G. Jaumann. The author shows that the potential which leads to a spark discharge depends upon several elements besides the thickness and nature of the dielectric, the chief one being the presence of variations of electric force, which hasten the discharge and lower the necessary difference of potential. When these variations are avoided, differences of potential amounting to several times the ordinary ones may become necessary for discharge. The spark gap is also affected by previous sparks and by a delay in discharging.

SOCIETIES AND ACADEMIES.

Paris.

Academy of Sciences, September 16.—M. A. Cornu in the chair.—A memoir by M. F. V. Maquaire, on protection against naval collisions, was referred to a Committee.—The perpetual Secretary, in presenting vol. vi. of "Œuvres de Christiaan Huygens," reminded the Academy of the loss of M. Bierens de Hahn. The Haarlem Society will continue the publication of this work, so ably edited by M. Hahn.—On the "équilatères" included in the equations $O = \Sigma_1^{2n-2} l_1 T_1^{\,n} \equiv H_n$, $O = \Sigma_1^{2n-1} l_1 T_1^{\,n} \equiv H_n + \lambda H'_1$, by M. Paul Serret.—Researches on Algerian phosphates. The case of a phosphatic rock from Bougie, having the composition of a superphosphate, by MM. H. and A. Malbot. The results of a number of analyses of rocks from various sources are tabulated. The Bougie rock is described in detail, as it presents several peculiarities. With regard to the method of analysis, the conclusions are drawn: (1) The presence of organic matter may produce a loss when the phosphoric acid is estimated by direct precipitation as magnesium ammonium phosphate in citric liquor, and this error is not always diminished by a preliminary evaporation with nitric acid on the sand bath. (2) The same error does not occur if the phosphoric acid be first precipitated as ammonium phosphomolybdate. (3) The agreement between the two methods is exact when the organic matter is first destroyed by calcination at a red heat.—The neoformation of nerve cells in the brain of the monkey, following the complete ablation of the occipital lobes, by M. Alex. N. Vitzou, of Bucharest. A detailed account is given of the gradual recovery of the power of perceiving external objects by a monkey after complete ablation of the occipital lobes. An examination revealed the fact that the space formerly filled by the occipital lobes had been filled up by new tissue which was found to consist throughout of pyramidal nerve cells and nerve tissues, the cells being less numerous than in the ordinary occipital lobes of the adult. The new tissue was not due to hypertrophy of the anterior lobes. On repeating the ablation the monkey again lost the power of perceiving external objects, and is still under observation.—M. Ch. V. Zenger records in a note the occurrence of atmospheric disturbances at certain points in Central Europe on September 10 and 11, as predicted by him.

New South Wales.

Linnean Society, July 31.—Mr. Henry Deane, President, in the chair.—Catalogue of the described Coleoptera of Australia. Supplement part i.—*Cicindelidæ* and *Carabidæ*, by George Masters. It is proposed to give as far as possible a complete list of all the Australian Coleoptera described since the year 1886, also to fill in the omissions previous to that date. The present part contains references to 429 species, besides many corrections, and additional localities.—Australian *Termitidæ*, part i., by W. W. Froggatt. The author gives an account of the distribution of *Termites* in general and of the damage done by them, and passes on to a consideration of the habits and range of Australian forms, concluding with a general account of the structure of the termitaria of both the common mound-building species, and of those of *Eutermes* which form arboreal nests as well as on the ground. (*a*) Report on a fungus (*Meliola amphitricha*, Fries.) on *Dysoxylon*. The fungus is found on the leaves of *Dysoxylon rufum*, Benth., on the Richmond River, N.S.W., and has not previously been recorded for this colony. (*b*) Notes on *Uromyces amygdali*, Cooke—a synonym of *Puccinia pruni*, Pers.—Prune rust. This leaf rust is of great economic importance, since it attacks such valuable fruit trees as peach and nectarine, plum and apricot, cherry and almond, causing them prematurely to shed their leaves, and as a consequence, either to bear no fruit, or only small quantities of an inferior kind. Though sometimes called "Peach Yellows," it must not be confounded with the dreaded disease, due to bacteria, known by that name in the United States. Specimens of affected peach leaves, forwarded by Mr. Tryon from Queensland, yielded both uredospores and two-celled teleutospores. In Victoria in the summer season, even as late as July, only the uredospores are at all common. (*c*) Groundsel rust, *Puccinia erechtitis*, McAlp., with trimorphic teleutospores. The æcidial stage is common on groundsel; but this is the first record for teleutospores in Australia. The rust is identical with that on *Erechtites*, described last year. The specimens were procured at Hobart, Tasmania.—By D. McAlpine, Government Pathologist, Melbourne. (Communicated by J. H. Maiden). On a new species of *Elæocarpus* from Northern New South Wales, by J. H. Maiden and R. T. Baker. A large tree (height 80-100 feet, and a trunk diameter of 2-3 feet as seen), found on the Brunswick River. The affinities of this species lie between *E. sericopetalus*, F.v.M., and *E. ruminatus*, F.v.M.; it differs from these two species in the number of stamens, lobed petals, bracts, and fruits. It is named in honour of Mr. William Baeuerlen, Botanical Collector to the Technological Museum, Sydney.—On a new cone from the Solomon Islands, by John Brazier.

Brisbane.

Royal Geographical Society of Australasia.—Annual meeting, July 22.—Mr. J. P. Thomson, President, in the chair.—The Secretary, Mr. J. Fenwick, read the yearly report of the Council, which stated that during the year sixteen ordinary members had been added to the roll of the Society. The library had received some valuable donations and exchanges, and the finances of the Society were in a satisfactory condition. The President read an address on the subject of the physical geography of Australia, after which the election of officers took place.

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